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REMARKS

Claims 32, 34-36, 38-40, 42, 43, 47, 49-51, 53-55, 57, 58, 61, 68-75, 83, and 84 are pending in the application with claims 32, 47, and 83 amended herein, new claim 84 added herein, and claims 33, 37, 48, and 52 cancelled herein.

Claim 83 stands rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Without admitting to the propriety of the rejection, Applicant herein amends claim 83 to set forth a center peak intensity of about 7 to about 17 random and new claim 84 sets forth that the center peak intensity is about 17 random. Applicant asserts that at least figures 5 and 6 of the present specification support the claimed range of center peak intensity in claim 83. Applicant requests withdrawal of the written description rejection in the next Office Action.

Claims 32-40, 42, 43, 47-55, 57, 58, 61, 68-75 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Klose DD 284,905 A5 (Klose). Applicant requests reconsideration.

Amended claim 32 sets forth a tantalum disc that includes, among other features, a maximum tantalum grain size of less than 50 microns at the disc surface. Amended claim 32 incorporates the subject matter of previous claims 37 and 41. Page 4 of the Office Action alleges that Klose discloses the claimed maximum grain size. Applicant traverses.

The Office fails to identify by page and line number any disclosure or suggestion of maximum grain size in Klose. Applicant recognizes a

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description of "average grain diameter of 0.008 to 0.20 mm" (8 to 20 microns) on page 5, lines 15-16 of Klose. However, the express teachings of Klose pertain only to "average" grain diameter and are not directed to "maximum" grain size, such as set forth in claim 32. It is clear from claim 32 that "average grain size" is a different parameter from "maximum grain size." It is also clear to those of ordinary skill that the "average grain diameter" of Klose is obtained by averaging the diameters of measured grains and that a wide distribution of grain diameter typically exists within tantalum sheet metal. Accordingly, Klose cannot be considered to inherently teach any maximum grain size.

Further, Klose fails to provide any acknowledgment whatever of the significance of maximum grain size. In contrast, the Declaration of Ritesh P. Shah, Ph.D., previously made of record in the present application, establishes in paragraphs 6 and 7 that grain size is of "critical" importance in the context of sputtering target improvement. Accordingly, a tantalum disc as set forth in claim 32 with a maximum grain size of less than 50 microns possesses a significant advantage over the tantalum sheet metal of Klose with an average grain diameter of 8-20 microns but lacking any limitation of maximum grain size. As declared by Dr. Shah, large grains result in a protrusion of grain material during sputtering and produces micro-arcing that reduces the quality of deposited films.

Applicant reminds the Office that a *prima facie* case of obviousness requires a suggestion to make the claimed device, a reasonable expectation

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of success in making the claimed device, and suggestion of every claim limitation. The Office Action fails to establish the existence of any suggestion in Klose to make a tantalum disc with a maximum grain size of less than 50 microns. Klose fails to appreciate the significance of such a parameter. Also, Klose fails to reveal a reasonable expectation of success in attempting to make a tantalum disc with a maximum grain size of less than 50 microns. At least page 7, line 1 to page 9, line 31 and page 13, line 19 to page 14, line 7 of the present specification disclose detailed processes for producing a tantalum disc with a maximum grain size of less than 50 microns. In contrast, the methods of making tantalum sheet metal in Klose differ significantly and do not reveal a reasonable expectation of success in making a tantalum disc with a maximum grain size of less than 50 microns. Further, Klose fails to suggest every limitation of claim 32 by foregoing mention of maximum grain size. At least for the indicated reasons, the Office Action fails to establish every one of the required three basic criteria to make a *prima facie case* of obviousness. Accordingly, Applicant asserts that claim 32 is patentable over Klose. Claims 34-36 depend from claim 32 and are patentable at least for such reason as well as for the additional limitations of such claims not disclosed or suggested.

As may be appreciated from the above discussion regarding the deficiencies of Klose as applied to claim 32, claims 38-40, 42, 43, 47, 49-51, 53-55, 57, 58, and 61 which also set forth a maximum grain size of less than 50 microns are patentable over Klose.

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Claim 68 sets forth a tantalum target blank that includes, among other features, a substantially uniform {100} crystallographic orientation throughout the thickness of the blank. Applicant previously asserted that, pursuant to MPEP 2141.01(a), Klose constitutes non-analogous art. Page 3-4 of the Office Action alleges that Klose is analogous since it merely indicates the "intended use for the tantalum sheet [and], therefore, does not preclude the tantalum sheet from being a sputtering target" and JP08-269701 allegedly teaches using a metal sheet for sputtering. Detailed review of JP08-269701 does not reveal any disclosure or suggestion of using a metal sheet for sputtering. More significantly, the Office's allegation is not a relevant consideration in determining whether art is analogous.

Instead, "[i]n order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). "A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992). Where the general scope of a reference is outside the pertinent field of endeavor, the reference may be considered analogous art if subject matter disclosed therein is relevant to the particular problem with which the

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inventor is involved. MPEP § 2141.01(a) citing State Contracting & Eng'g Corp. v. Condotte America, Inc., 346 F.3d 1057, 1069, 68 USPQ2d 1481, 1490 (Fed. Cir. 2003).

Since claim 68 is directed to a tantalum target blank, page 11, lines 23-30 of the present specification summarize Applicant's field of endeavor as relating to sputtering targets and the particular problem with which the inventors were concerned as relating to improvement in sputtering target performance. However, as stated on its page 2, Klose is specifically directed to manufacture of spinnerets for the synthetic-fibers industry. Thus, Applicant asserts that Klose is not in the field of Applicant's endeavor. Also, as stated on its page 4, Klose is concerned with the problem of extending the service life of hard-metal piercing needles. Thus, Applicant asserts that Klose is not reasonably pertinent to the particular problem with which Applicant was concerned. Such conclusion is warranted because the matter with which Klose deals, would not have logically commended itself to Applicant's attention in considering the problem of sputtering target performance. Further, no support exists for the proposition that Klose is otherwise relevant to the particular problem with which the Applicant was involved. At least for such reasons, Klose constitutes non-analogous art with respect to claim 68.

Claims 69-72 depend from claim 68 and are patentable at least for such reason as well as for the additional limitations of such claims not disclosed or suggested. As may be appreciated from the discussion above regarding the

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deficiencies of Klose as applied to claim 68, claims 73-75, which also set forth a tantalum target, are patentable over Klose.

At least for the reasons set forth herein, Applicant asserts that claims 32, 34-36, 38-40, 42, 43, 47, 49-51, 53-55, 57, 58, 61, and 68-75 are patentable over Klose and requests allowance of all pending claims in the next Office Action.

Applicant previously filed an Information Disclosure Statement on February 3, 2005 and verified that the documents exist in the image file wrapper of the present application. Applicant has not yet received an examiner initialed copy of the Form PTO-1449 indication consideration of the cited references and requests sending of same with the next Office Action.

Respectfully submitted,

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